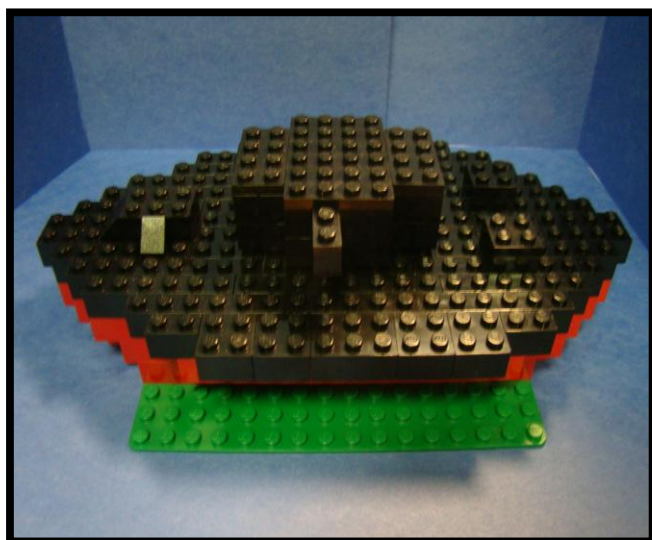
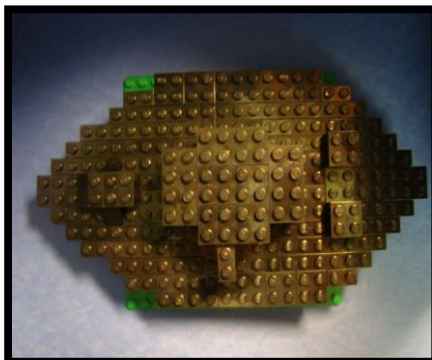


# Brick by Brick: LEGO® Shipbuilding

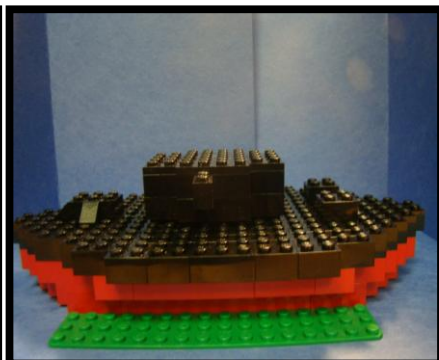
LEVEL: EXPERT (USS *MONITOR*)



TOP



TOP



SIDE

RED AND BLACK BRICKS  
ARE REQUIRED FOR  
THIS MODEL.

## BRICK SUPPLY LIST

BRICK DIM.	RED	BLACK
1X2	6	17
1x3	6	2
1x4	5	8
1x6	9	10
1x8	6	6
1X10	4	1
2X2	4	18
2X3	6	10
2X4	8	5
2X6	8	0
2x8	2	0
SLANTED 1X2	0	2
SLANTED 2X2	0	1
THIN 2X4	0	6
TOTALS:	64	86

TOTAL BRICKS: 150

BLACK AND RED BRICKS ARE REQUIRED FOR THIS MODEL.



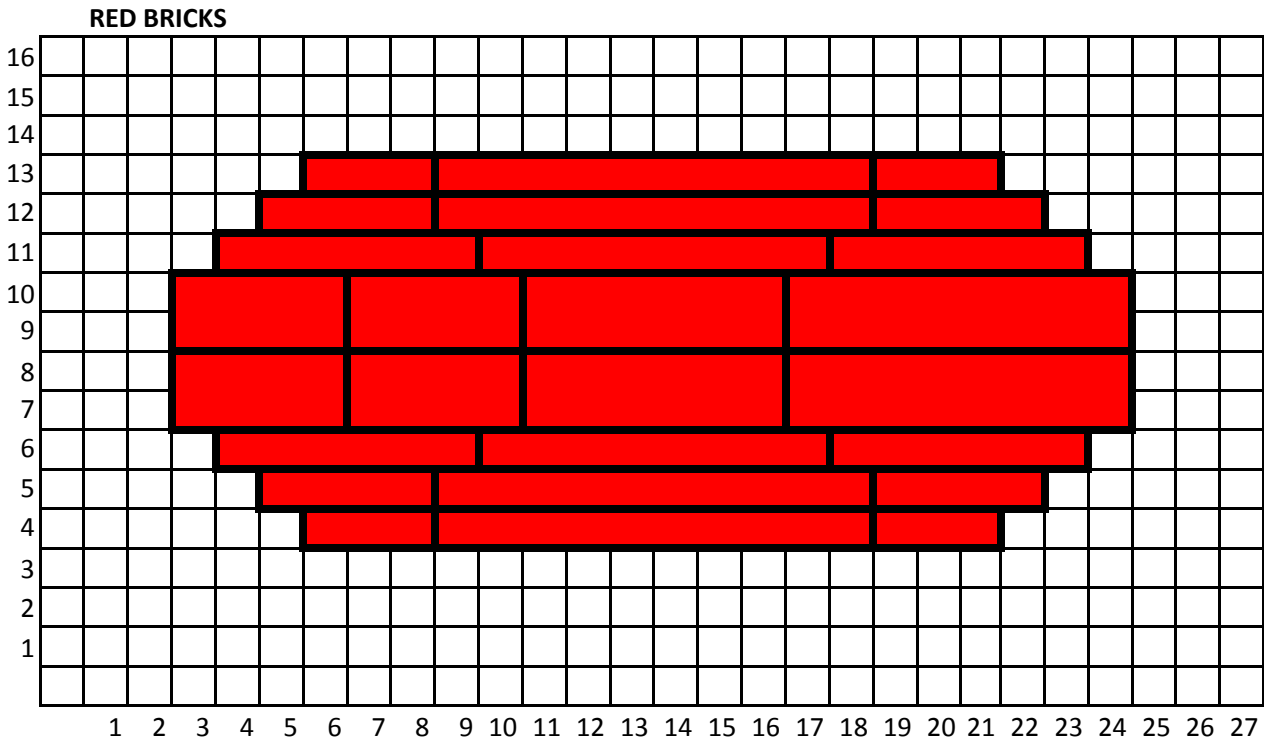
### A Note on Dimension:

The instructions included for this ship model represent a new educational initiative by the Hampton Roads Naval Museum in order to promote STEM principles under the lens of naval history. When properly assembled, each graph (or Step) represents a layer of bricks built to resemble a design of a specific ship used in American naval history. Colors represent each specific layer of the vessel, from the keel to the top masts. Please note that the sizes and shapes represented in these instructions are squared. However, they are not to scale with LEGO brick sizes. They merely show the graphical placement locations of brick layers. For more information or questions, please email Matthew Eng at [matthew.t.eng@navy.mil](mailto:matthew.t.eng@navy.mil). Ship Models included in this program are built with LEGO® bricks. LEGO® is a trademark of the LEGO Group of companies which does not sponsor, authorize, or endorse this site.

USS Monitor (Miniature)

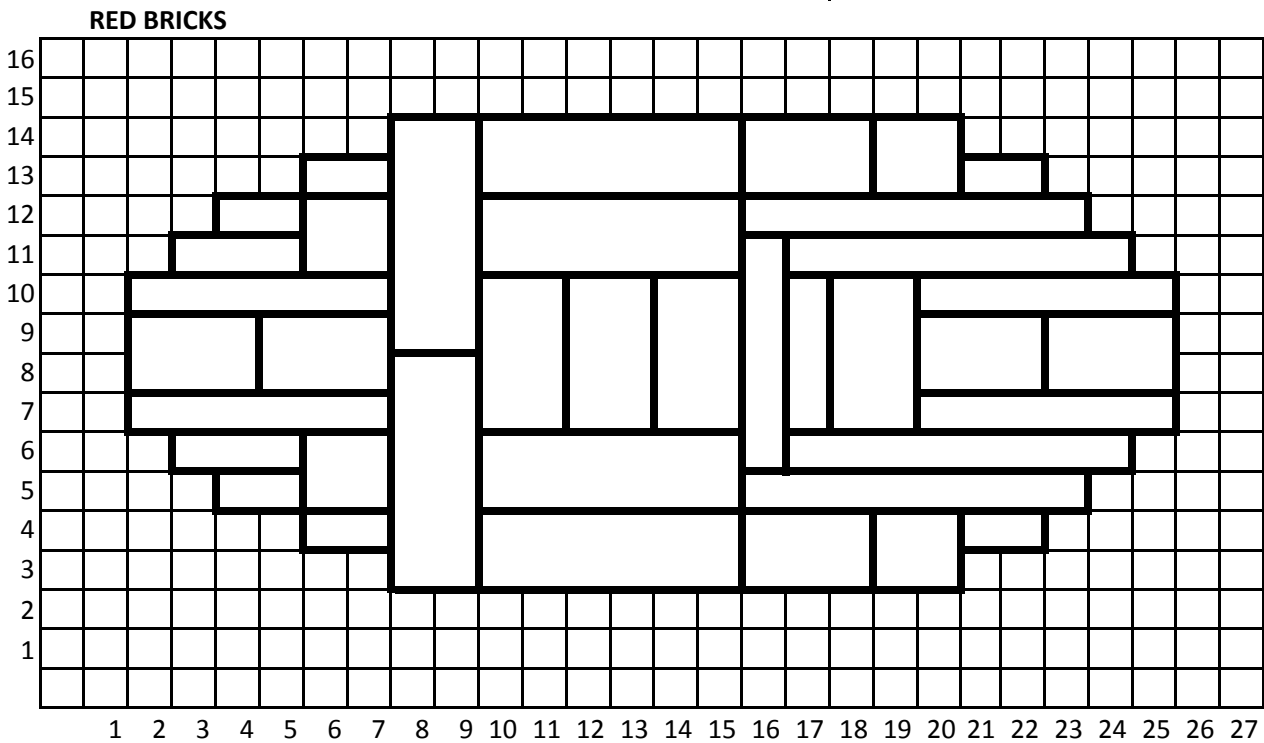
Instructions: Follow each step and layer the color-coded bricks on your building grid. Subsequent steps are layered on top of previous layers.

Step 1: Construct the base of the ship (shown in Red)



USS Monitor (Miniature)  
Step by Step Instructions

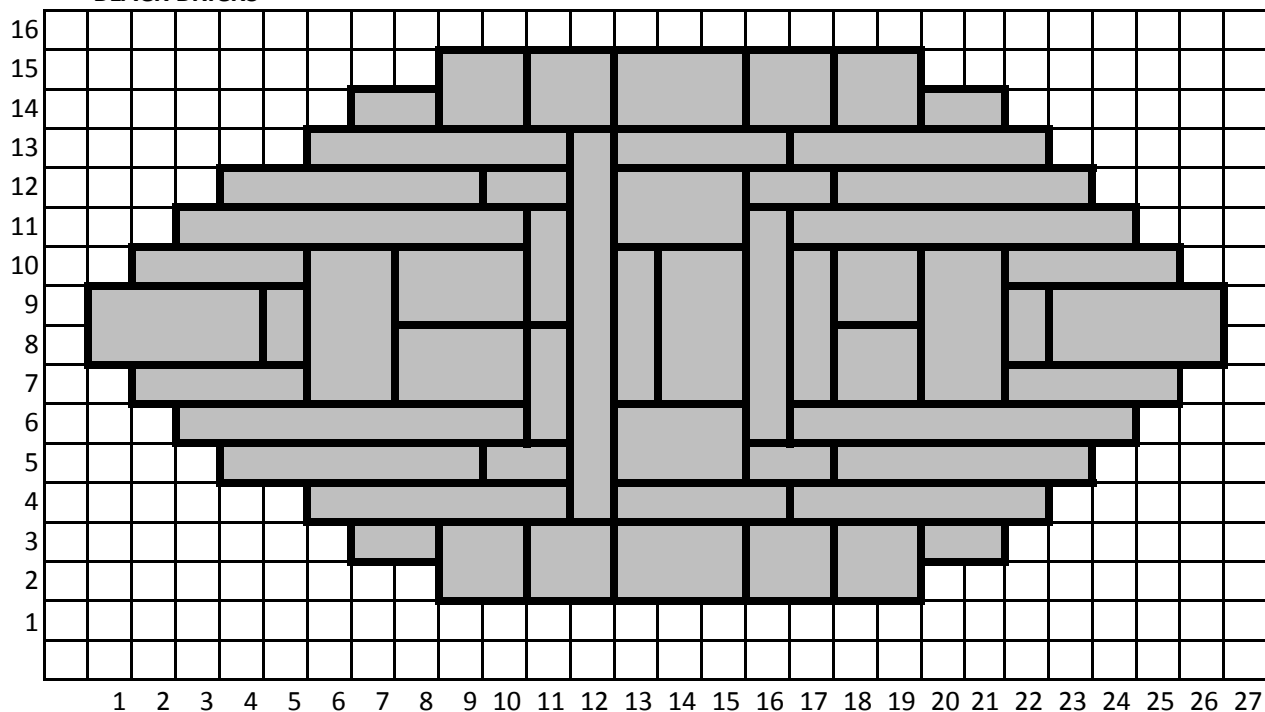
Step 2: Construct the second layer of the ship (shown in White)



**USS Monitor (Miniature)**  
**Step by Step Instructions**

**Step 3:** Construct the top layer of the ship (shown in Gray)

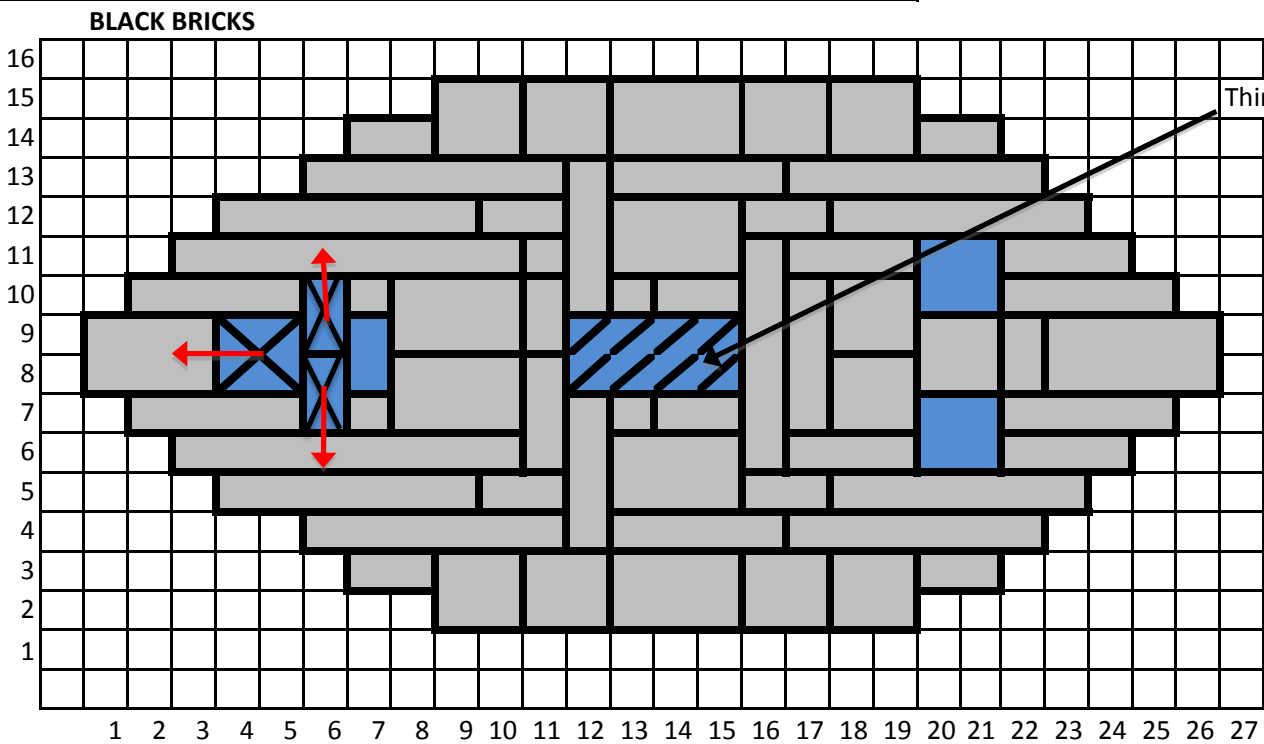
**BLACK BRICKS**



USS Monitor (Miniature)  
Step by Step Instructions



Step 4: Construct the pilothouse and smokestacks (shown in Blue)



Denotes a slanted brick.



The arrow points in the direction of the slant.



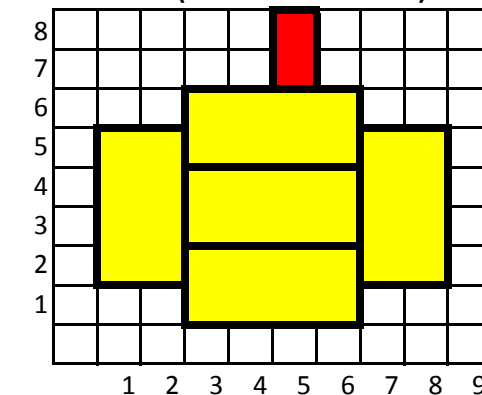
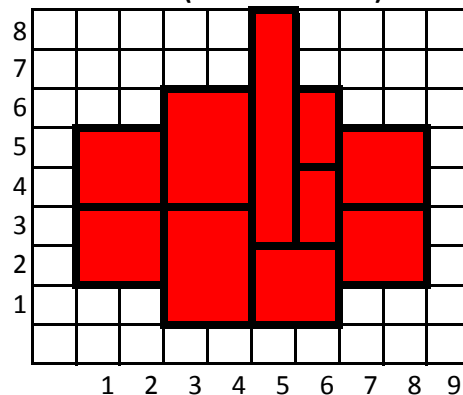
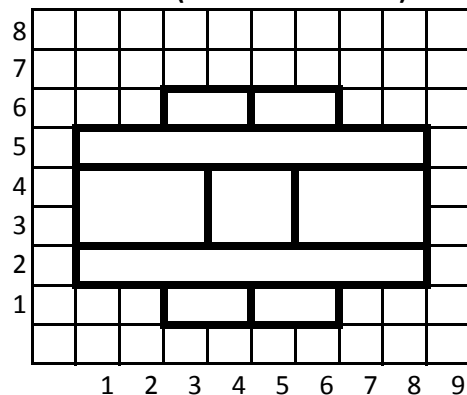
Denotes a Flat (Thin) brick.

### Step by Step Instructions

**NOTE:** BRICKS USED WILL BE BLACK; WHITE, RED, AND YELLOW BRICKS DISTINGUISH THE PROCEEDING LAYERS.

**LAYER TWO (SHOWN IN RED)**

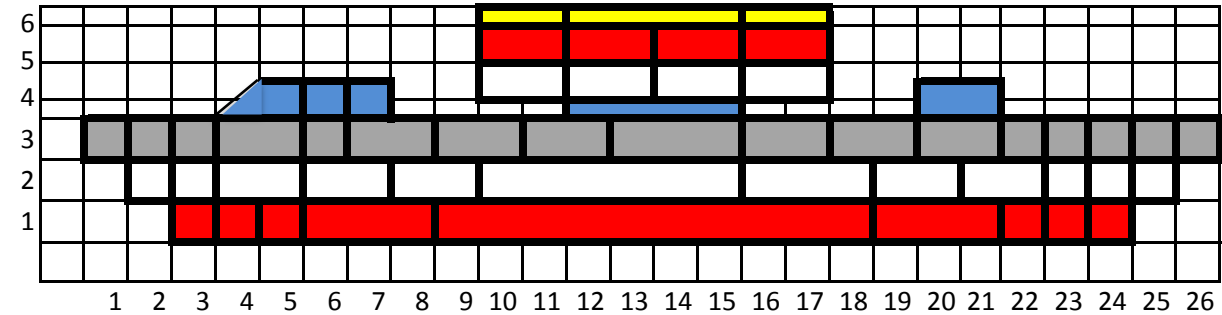
**LAYER THREE (SHOWN IN YELLOW)**



A 27x16 grid with a central yellow cross. The grid is composed of 27 columns and 16 rows. The central cross is yellow, with a vertical bar from row 7 to row 12 and a horizontal bar from column 9 to column 15. The background is gray. There are several blue squares: at (4,9), (5,10), (6,8), (6,9), (7,9), (20,11), and (21,7). There is one red square at (14,13). The grid is surrounded by a black border.

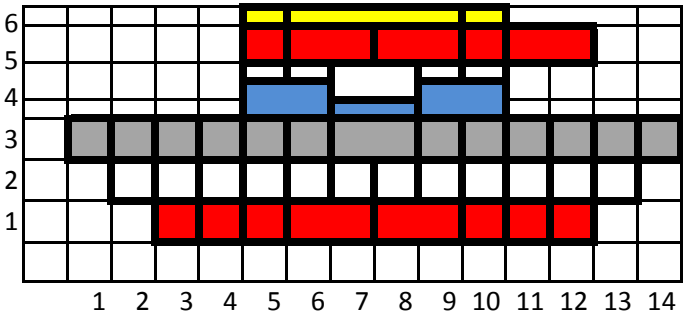
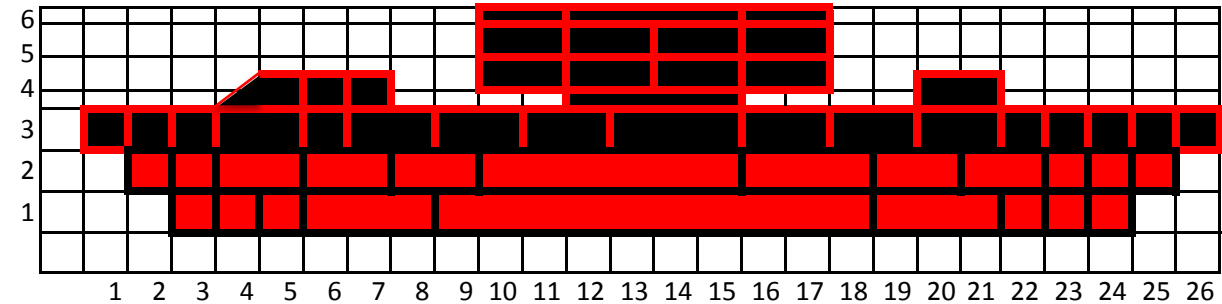
USS Monitor (Miniature)  
Final Ship Dimensions

NOTE: Figure shown by level, not actual brick color (Step by Step instructions shown above)



FINAL DESIGN

NOTE: Figures shown below reflect actual brick color.



FINAL DESIGN

